

A new reconstruction of the original Glagolitic alphabet

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Abstract: Although the original Glagolitic alphabet is nowhere preserved in its entirety, considerable evidence remains from which it can be reconstructed. Since this evidence is not self-consistent, it must be weighed, not merely counted, and some of it must be discarded. Previous scholarship has erred in its weighing of some of this evidence, in particular by overvaluing the evidence of early Glagolitic and Cyrillic abecedaria. The reconstruction offered here rests primarily on the attested numerical values of Glagolitic letters in early manuscripts and on the acrostic in an early poem by Constantine of Preslav, supplemented to a very small extent by Monk Xrabr's treatise "On the Letters" and by the abecedaria. (Two new emendations are also proposed in the text of the acrostic poem.) The present reconstruction gives reason to challenge the common opinion that Constantine of Thessalonica, who created the Glagolitic alphabet, did so on the basis of a sophisticated and accurate phonological analysis of some Slavic dialect. It also gives reason to suppose that Constantine had access to information about the Armenian alphabet and its creator, Mesrop-Maštoc', and that he might have taken the Armenian alphabet as a model for the choice and the order of the letters in the latter part of his original Glagolitic alphabet.

1. Introduction

The oldest Slavic alphabet, which we now call Glagolitic, did not evolve slowly from some other form of writing. Rather, it was created all at one go, in the city of Constantinople in the year 863 AD, by the efforts of one man. This man was Constantine of Thessalonica, otherwise known as Constantine the Philosopher.

Over the ensuing centuries the Glagolitic alphabet was modified more than once in response to varying conditions, both linguistic and cultural, as its use spread from Great Moravia and Pannonia to other Slavic lands. The earliest of these modifications may even have been made by Constantine himself (d. 869) or by his brother Methodius (d. 885). By far the most radical of all these modifications happened at the end of the ninth century. It consisted, first, in replacing the original shapes or *forms* (χαράκτῆρες) of many Glagolitic letters by the forms of corresponding Greek letters, and, second, in modifying the forms of the remaining Glagolitic letters to give them the same look and feel as Greek letters. In this way was created the alphabet that we

now call Cyrillic.¹ If we can trust the witness of a later Greek text, this modification was carried out by one of Constantine and Methodius's foremost disciples, Clement of Ohrid, who "contrived (ἐσοφίσατο) other forms of letters (χαρακτῆρας ἑτέρους γραμμάτων) for greater clarity (πρὸς τὸ σαφέστερον)" than those that the wise Constantine had "invented" (ἐξεῦρεν).²

As it happens, the original form of the Glagolitic alphabet has not been preserved in its entirety anywhere. It must be reconstructed on the basis of all the available evidence. This article offers such a reconstruction.

2. Constantine's Greek model for the Glagolitic alphabet

Before embarking on the details of this reconstruction, we should ask a straightforward question: what, precisely, did Constantine think that creating an alphabet entailed? Of what did an alphabet consist, according to educated Greeks in the ninth century?

Constantine's first model, of course, would be the Greek alphabet. In the ninth century, the Greek alphabet consisted of twenty-four letters in a fixed *order* (τάξις). Each *letter* (γράμμα) had its proper shape or *form* (χαρακτήρ), its distinct *name* (ὄνομα), and its distinct pronunciation or power or *phonetic value* (δύναμις).³

Each letter of the Greek alphabet could also stand for a number, assigned in ascending order from the beginning of the alphabet to its end: first came the nine units, then the nine tens, and finally the nine hundreds. A full system of this sort would require twenty-seven symbols. The twenty-four letters of the Greek alphabet were supplemented, therefore, by three additional symbols. These three symbols had, in fact, been letters many centuries earlier. Like the letters, they still had their own distinct forms and names, but they had lost their phonetic values, and they were no longer included in the ordinary alphabet. They were not called *letters* (γράμματα) any longer, but *numerals* (ἄριθμοί).

According to Greek grammatical theory, as it was taught in the ninth century, the twenty-four letters were divided into seven *vowels* (α ε η ι ο υ ω) and seventeen *consonants* (β γ δ ζ θ κ λ μ ν ξ π ρ σ τ φ χ ψ). In addition, eleven specific combinations of

¹ Cyril is the name that Constantine adopted when he took monastic orders a few days before his death.

² *Brevis vita Clementis Bulgarici* XIV. This vita is extant in both Greek and Church Slavonic. Some of the Greek texts offer a variant reading, χαρακτῆρας ἑτέρων γραμμάτων 'forms of other letters', which makes much less sense; the Church Slavonic version (*obrazy inye slovesnyje*) supports the reading given here (Teodorov-Balan 1920–34, 2: 177, 133). Historical sources are cited by their usual Latin titles, according to Grivec and Tomšič 1960.

³ For this Greek grammatical terminology see the scholia on Dionysius Thrax's *Ars Grammatica* (ed. Hilgard 1901: 31–32) and Diogenes Laertius's *Vitae philosophorum* VII.56.

two vowel letters were called *diphthongs*: αι, α, αυ, ει, ευ, η, ηυ, οι, ου, υι, and φ.⁴ In ancient times, most or all of these diphthongs were pronounced as a vowel followed by a vocalic glide, for example, οι = [oi] or ευ = [eu].

By the ninth century, however, none of these eleven “diphthongs” was still pronounced in that manner. Eight of them had come to be pronounced as a single vowel, for example, οι = [ü]. The other three of them had come to be pronounced as a vowel followed by a fricative consonant, for example, ευ = [ev] or [ef]. It might be more accurate, for the ninth century, to call these eleven combinations of letters *digraphs* instead of diphthongs, as we shall do in this article.

In the ninth century, therefore, the pronunciation of the eight digraphs that had developed into single vowels was as follows: αι = [e], ει = [i], οι = [ü], υι = [ü], ου = [u], α = [a], η = [i], and φ = [o].⁵ Note that all but one of these vowel sounds could also be expressed in writing by a single vowel letter, as follows: [a] = α, [e] = ε, [i] = η or ι, [o] = ο or ω, and [ü] = υ. The one exception was the vowel sound [u], which could only be written by a digraph: [u] = ου. Because of this, much time had to be spent in teaching young pupils where they should use a single vowel letter, and where a digraph, to write each of the vowel sounds [a], [e], [i], [o], or [ü]. Careless or poorly instructed scribes would confuse these vowel letters and digraphs with one another as they wrote. Their mistakes are good evidence for the pronunciation of Greek that had become current in their times.

The pronunciation of the other three digraphs was a simple vowel followed by the consonant [v] or [f], depending on the immediately following sound. They were pronounced with [f] only when the digraph was followed immediately by one of the seven voiceless consonants; in all other positions they were pronounced with [v].⁶ That is, usually αυ = [av], ευ = [ev], and ηυ = [iv]. However, before a voiceless consonant αυ = [af], ευ = [ef], and ηυ = [if].

Since the consonant β had also come to be pronounced [v] in most positions (including the position immediately after a vowel), young pupils had to learn, too, where to write αυ (or ευ or ηυ) and where to write αβ (or εβ or ηβ). Again, careless or poorly instructed scribes would write β for υ, or vice versa, in these digraphs. Their mistakes, again, are good evidence for the pronunciation of Greek that had become current in their times.

Surprisingly, scribes seem not to confuse αυ, ευ, and ηυ before voiceless consonants with αφ, εφ, and ηφ until very much later. This shows that in the ninth century φ had not yet come to be pronounced as [f], and that it retained an earlier pronunciation,

⁴ The Greek term for diphthongs is διφθογγοι, which is translated into Slavic as *dvoglasъnaja* [sc. *pismena*] in Xrabr's treatise (see section 4.3 below).

⁵ Note that the vowel [ü] had not yet become [i] at this time in the formal pronunciation of educated Greeks (Browning 1983: 56–57).

⁶ The voiceless consonants are [s] = σ, [p] = π, [t] = τ, [k] = κ, [p^h] = φ, [t^h] = θ, and [k^h] = χ. There are also distinct *letters* for two voiceless consonant clusters, [ps] = ψ and [ks] = ξ, but they do not add anything to the inventory of consonant *sounds*.

very likely as the aspirated stop [p^h], at least in the formal Greek of highly educated people. It seems safe to assume that this was true of the other two aspirated stops as well. That is, it seems likely that in the formal pronunciation of highly educated Greeks of the ninth century, θ, φ, and χ had not yet become the fricatives [p], [f], and [x], but were still the aspirated stops [t^h], [p^h], and [k^h].⁷

In consequence of all this, when Constantine set out to create the Glagolitic alphabet, for each *letter* he would have invented (i) a *form* and (ii) a *name*. He would also have assigned to that letter (iii) a *phonetic value*, which would naturally have reflected his own understanding of the phonetic system of Slavic, filtered through the phonetic system of his native Greek. He would have fixed (iv) the *order* of these letters in his alphabet. Finally, he would have assigned to each letter (v) a *numerical value* in ascending order. He might also have created *digraphs* and *numerals*, had he seen any need for them, but these digraphs and numerals would not have had any place of their own in the order of his alphabet.⁸

And this, as we shall see, is just what he did.

3. Constantine's other models for the Glagolitic alphabet

But this is not all. There is reason to believe that Constantine had mastered not just Greek, but Latin, too, as well as several Semitic languages, namely, Hebrew and Aramaic in both their Jewish and their Samaritan variants, and Syriac.⁹ It is possible that he had also acquired some knowledge of Arabic.¹⁰ Therefore he could have used the alphabets of these other languages as secondary models for his work, even though he undoubtedly took the Greek alphabet as his primary model.

According to one reliable source, Constantine also was aware that many other peoples in the Byzantine orbit had alphabets (or some other writing systems, *könig*) for their languages: "Armenians, Persians, Abkhazes, Georgians, Sogdians, Goths, Avars, Turks, Chazars, Arabs, Egyptians, and many others."¹¹ If he had specific

⁷ See Trubeckoj 1936, and now also Macharadse 1980.

⁸ Whether the *forms* of any Glagolitic letters were derived from the forms of the corresponding Greek letters, or indeed from the forms of the corresponding letters in any other alphabet, is of very little importance for our inquiry here.

⁹ *Vita Constantini* VII.10–12 [Constantine studied Hebrew grammar and learned how to read Samaritan books], 15 [he learned to read Syriac books], XIII.3–4 [he translated Jewish and Samaritan inscriptions]. *Brevis vita Cyrilli* II [he studied philosophy in four languages: Greek, Latin, Syriac, and Hebrew]. *Sermo Panegyricus in laudem Cyrilli et Methodii* III [Constantine had "the spiritual gift of speaking in tongues" (*даръ духовъныи języky glagolati*)].

¹⁰ *Vita Constantini* VI.31 [Constantine quoted the Qur'an]. *Sermo Panegyricus in laudem Cyrilli et Methodii* VIII [he quoted Jewish and Muslim books].

¹¹ *Vita Constantini* XVI.8. Some manuscripts of this work add "Syrians" after "Egyptians" in the list.

knowledge of the alphabets of any of these languages, he might have taken them, too, as secondary models for his work.

Of all these languages, Constantine is most likely to have had some knowledge of Armenian, since his early teacher, Photius (Patriarch of Constantinople, 858–67 and 877–86), was uncommonly well-informed about Armenian ecclesiastical affairs and could even make use of historical sources (including the histories by Movsēs Xorenac‘i and by Agat‘angelos) written in Armenian.¹² It may not be an accident that Armenian heads the list of languages quoted above.

4. The best evidence for the original Glagolitic alphabet

Our most reliable pieces of evidence for Constantine’s original Glagolitic alphabet are just two: (i) the attested numerical values of the Glagolitic letters in the oldest Glagolitic manuscripts, and (ii) the acrostic in a very old poem composed by Constantine of Preslav, otherwise known as Constantine the Younger, around the year 900. This poem is known only from later Cyrillic copies.¹³

To them may be added (iii) the treatise *On Letters* (*O pismenexъ*), composed in the first third of the tenth century by a monk probably named Xrabr (*Xrabrъ*), but it skimps on just the details that most interest us here. It, too, is preserved only in later Cyrillic copies, many of which have been heavily redacted.¹⁴

Some scholars also adduce the evidence of (iv) various Glagolitic or Cyrillic abecedaria or even place these abecedaria at the center of their investigations. However, as we shall see below, all known abecedaria mislead us as often as they lead us true when we try to use them as sources for the original Glagolitic alphabet. The later ones, naturally, reflect later modifications of the Slavic alphabets that were made from time to time during the last thousand years.

Yet even the earliest extant abecedaria are not as reliable as we might wish. The very earliest of them are mere graffiti, originally incomplete or incompletely preserved. Other very early and archaic abecedaria, notably the well-known “Abecedarium Bulgaricum” (as it is titled in the manuscript) and the Munich Abecedaria, were written by scribes who seem to have looked on the Glagolitic and Cyrillic alphabets as exotic curiosities but who had little or no experience with the actual use of either alphabet to write texts in Slavic. Since these two early abecedaria offer so many interesting puzzles, they have piqued the curiosity of almost every scholar working on the early history of the Slavic alphabets. They tempt one to give them too much weight as evidence for the original Glagolitic alphabet. This is a serious mistake.

¹² See now Greenwood 2006 on this subject.

¹³ Kuev 1974 published thirty-eight variant texts of this poem.

¹⁴ Kuev 1967 published seventy-three variant texts of the treatise.

Table 1. The best evidence for Constantine's original Glagolitic alphabet

#1	#2a	#2b	#2c	#2d	#3	#4	#5			#6
1	1	Ɱ		Ɱ	Ɱ		Ɱ	A	1	Ɱ
2	2	Ɱ		Ɱ	Ɱ	Ɱ				Ɱ
3	3	Ɱ		Ɱ	Ɱ		Ɱ	B	2	Ɱ
4	4	Ɱ		Ɱ	Ɱ		Ɱ	Γ	3	Ɱ
5	5	Ɱ		Ɱ	Ɱ		Ɱ	Δ	4	Ɱ
6	6	Ɱ		Ɱ	Ɱ		Ɱ	E	5	Ɱ
7	7	Ɱ		Ɱ	Ɱ	Ɱ				Ɱ
8	8	Ɱ		Ɱ	Ɱ	Ɱ				Ɱ
9	9	Ɱ		Ɱ	Ɱ		Ɱ	Z	7	Ɱ
10	10	Ɱ		Ɱ	Ɱ		Ɱ	H	8	Ɱ
11	20	Ɱ		Ɱ	Ɱ		Ɱ	I	10	Ɱ
12	30	Ɱ		Ɱ	Ɱ > [Ɱ]					Ɱ
13	40	Ɱ		Ɱ	Ɱ		Ɱ	K	20	Ɱ
14	50	Ɱ		Ɱ	Ɱ		Ɱ	Λ	30	Ɱ
15	60	Ɱ		Ɱ	Ɱ		Ɱ	M	40	Ɱ
16	70	Ɱ		Ɱ	Ɱ		Ɱ	N	50	Ɱ
17	80	Ɱ		Ɱ	Ɱ		Ɱ	O	70	Ɱ
18	90	Ɱ		Ɱ	Ɱ		Ɱ	Π	80	Ɱ
19	100	Ɱ	Ɱ	Ɱ	Ɱ		Ɱ	P	100	Ɱ

Legend to Table 1

Column 1: The proper order of the letters in the original Glagolitic alphabet.

Column 2: The numerical values of these letters. (See section 4.1.)

(a) The theoretical system of numerical values.

(b) The numerical values attested in early Glagolitic manuscripts.

(c) The numerical values for the hundreds in the *Paroemiarium Grigoroviči*.

(d) The numerical values attested in later Glagolitic manuscripts.

Column 3: The initial letters of the verses in Constantine of Preslav's acrostic with two emendations as shown. (See section 4.2.)

20	200	Ɑ	Ɑ	Ɑ	Ɑ		Ɑ	Σ	200	Ɑ
21	300	σ	τ	σ	τ		τ	τ	300	σ
22	400		ϣ	ϣ	ϣ		ϣ	Υ	400	Ɑ
23	500		ϕ	ϕ	ϕ		ϕ	Φ	500	ϕ
24	600	Ɑ	χ	Ɑ	χ		χ	X	600	Ɑ
25	700		̄	ϙ	ω		ω	Ω	800	ϙ
26	800		π	ϣ (Δ)	π > [Ɑ]		Ɑ	Θ	9	Ɑ
27	900		ϭ	ϣ	ϭ	ϣ				ϣ
28	1000			ϣ	ϣ	ϣ				ϣ
29	2000			ϭ	ϭ	ϭ				ϭ
30	3000			(ϭ)	ϭ					ϣ
31	4000			(Δ)	ϭ					Ɑ
32	5000			(ϭ)	Ɑ / Ɑ	Δ				Δ
33	6000				χ					Ɑ
34	7000				Ɑ	Ɑ				Ɑ
35	8000				Ɑ	Ɑ				Ɑ
36	9000				Ɑ	Ɑ				Ɑ
							Ɑ	Ξ	60	
							ϣ	Ψ	700	
							Ɑ	ϭ	6	
							ϣ	ϭ	90	
							Ɑ	Ɑ	900	

Column 4: The initial letters (Glagolitic) of the words that cannot be written with Greek letters, according to Xrabr. (See section 4.3.)

Column 5: The numerical values of the Cyrillic and Greek letters.

Column 6: The reconstructed original Glagolitic alphabet from Table 2.

We shall now examine each of these pieces of evidence in turn. As we do so, it may be convenient to consult Table 1 (on pp. 192–93), which sets out the best evidence in parallel columns.

4.1. The numerical values of the Glagolitic letters

All of the Glagolitic letters that stand for the nine units, the nine tens, and the first three of the nine hundreds are very well attested in the oldest manuscripts. Most often they indicate the numbers of the psalms in the Psalter, or the numbers of the chapters and the Eusebian sections in each of the four Gospels but they may occur in other contexts as well. They firmly establish the order of the first twenty-one letters in the Glagolitic alphabet. This order also agrees in every particular with the order that can be established from the first twenty-one verses of Constantine of Preslav's acrostic poem, for which see the following section (4.2). (Table 1, column 2b, summarizes this evidence.)

Note that the numeral 10 is almost always represented by the form \mathfrak{X} , only rarely by the form \mathfrak{P} . Since the two forms of this letter are very close in shape, and they also have the same name (*iže*) as well as the same numerical value (10), it is certain that they are later variants of a single original Glagolitic letter, which came to have distinct uses as the alphabet was modified in response to varying linguistic and cultural circumstances over the centuries. I suppose that the prevailing use of \mathfrak{X} as a numeral indicates \mathfrak{X} to have been the original form of that letter, while \mathfrak{P} arose as a later variant of \mathfrak{X} .

The oldest Glagolitic manuscripts also offer one solitary example of a Glagolitic letter (\mathfrak{b}) with the numerical value of 600, which occurs in the *Evangelarium Assemanianum* (at f. 150b27). It is a stroke of good luck that the scribe of this manuscript knows both of the Glagolitic letters that can stand for [x], namely, \mathfrak{b} and \mathfrak{f} .¹⁵ Thus we can be confident that it was not \mathfrak{f} , but \mathfrak{b} that had the numerical value of 600 in the original Glagolitic alphabet.¹⁶

The numerals 100–700 and 900 are also well attested in many later Glagolitic manuscripts, where they are indicated by the following letters: 100 = \mathfrak{b} , 200 = \mathfrak{z} , 300 = \mathfrak{c} , 400 = \mathfrak{h} , 500 = \mathfrak{d} , 600 = \mathfrak{b} , 700 = \mathfrak{g} , and 900 = \mathfrak{v} . (Table 1, column 2d, summarizes this evidence.)

The same letters for the hundreds are also attested, paradoxically, in a Cyrillic manuscript of the twelfth century, the *Paroemiarium Grigoroviči* (ff. 28v, 29v, 31v, 35v, 36r, 37v, 41v, 48r, 65v, 69v, 77v, 96v), which was probably copied from a significantly older Glagolitic original. This manuscript offers several good examples of

¹⁵ The letter \mathfrak{f} stands for [x] in the word *xľmъ* in the one place in that manuscript where that word occurs (f. 138b8); elsewhere in this manuscript [x] is always written with the letter \mathfrak{b} .

¹⁶ Šafařík 1853: xii adduces a second example of Glagolitic \mathfrak{b} = 600 in a Cyrillic manuscript of the twelfth or thirteenth century that had been copied directly from a Glagolitic original.

Cyrillic P = 100 (8x), C = 200 (2x), T = 300 (3x), OY = 400 (1x), ϕ = 500 (2x), and X = 600 (2x), but these examples are not very surprising, since the first six hundreds are the same in both the Cyrillic and the later Glagolitic systems of numerals. It is the last three of the hundreds that are significant. As a rule, Cyrillic manuscripts have Ψ = 700, W = 800, and A or A = 900, just as in the Greek.¹⁷ However, in the *Paroemiarium Grigoroviči* we do not find these Cyrillic numerals even once. Instead, we find W̄ = 700 (4x) and U = 900 (5x). These two numerical values also agree perfectly with the other good evidence that we have for the order of the original Glagolitic alphabet. (Table 1, column 2c, summarizes this evidence.)

The *Paroemiarium Grigoroviči* also offers one lone example of the numeral 800 (f. 28v32), in Genesis 5: 17. This character is hard to read in the original manuscript. Consequently it was transcribed as the Cyrillic letter П in both of the published editions.¹⁸ However, these editors were mistaken: the character is not the letter П, but something else. Mixajlov (1912: 200) correctly described it as “some sort of unintelligible sign cП” (*kakoj-to neponjatnyj znak cП*). My own examination of a photograph of the page shows me that the strange character is in fact an example of the mysterious letter dl.¹⁹ It is the one and only example of this letter in any text (apart from a few abecedaria).

Later Glagolitic manuscripts offer many examples of the numeral 800, but in them it is never indicated by dl. Usually 800 is indicated by the letter Ѡ. However, in one manuscript copied in 1391 (the *Breviarium Vrbnicense Secundum*), the letter A is used for 800 twice, despite the fact that the usual numerical value of that letter (A) in later Glagolitic manuscripts is 4000.²⁰ The odd use of the letter A for 800 in this manuscript suggests that its scribe found some obsolete, unfamiliar Glagolitic letter in his original, to which A was the best approximation among all the Glagolitic letters in his alphabet. What that unfamiliar letter might have been we shall see below, but Glagolitic A in this manuscript and Cyrillic dl in the *Paroemiarium Grigoroviči* offer significant clues as to its shape or *form* (χαρακτήρ). (Table 1, row 26, summarizes this evidence.)

Later Glagolitic manuscripts also offer good examples where the final letters of the alphabet stand for the thousands.²¹ Instances of M̄ = 1000 and W̄ = 2000 are com-

¹⁷ The Cyrillic system of numerical values derives from the Greek system entirely. The three Greek numerals that are not also letters (ζ or Ϝ = 6, ϙ or Ϟ = 90, and Ϡ = 900) are sometimes preserved in Cyrillic manuscripts, sometimes replaced by Cyrillic letters with similar forms (S, Y, and A). In very much later Cyrillic, 900 is often represented by U.

¹⁸ Brandt 1894–1901: 162; Ribarova and Hauptová 1998: 112–13.

¹⁹ My former student, Robert F. Allen, examined this page of the original manuscript in Moscow for me in the middle 1970s, and he confirmed that the character in question is a dl.

²⁰ Berčić 1868: 187–88. The text is Genesis 5: 17–18, which is the same text that contains dl in the *Paroemiarium Grigoroviči*.

²¹ See Berčić 1868; Crnčić 1871, 1873; Milčetić 1911: 95, 261, 383–84; Kos 1924–25: 379; Pacnerová 1968.

mon, and these numerical values also happen to be consistent with the reconstructed order of the letters in the original Glagolitic alphabet. After the letter $\text{III} = 2000$, the later Glagolitic alphabet omits some of the original letters; only three of the original seven usually remain, and their positions have naturally shifted forward in the alphabet. These three letters also sometimes stand for numerals: $\text{I} = 3000$, $\text{A} = 4000$, and $\text{P} = 5000$. These three numerical values cannot be reconciled with any plausible reconstruction of the original Glagolitic alphabet, but they arise of themselves within the later, truncated Glagolitic alphabet. (Table 1, column 2d, rows 30–32, summarize this evidence.)

All this evidence places the order and identity of the first twenty-nine letters of the original Glagolitic alphabet beyond any serious doubt, with the sole exception of the letter that originally had the numerical value 800 (variously attested as V , as A , and as dI).

The attested numerical values give us no evidence for the last few letters of the original Glagolitic alphabet. For them we must rely on other evidence, and particularly on the acrostic in Constantine of Preslav's poem. We shall turn to that acrostic shortly, but first there is one final observation that must be made.

As we saw above, the two Glagolitic letters X and P have the same *numerical value* (10) and the same *name* (*iže*), and their forms are also very similar. From these facts I conclude that the original Glagolitic alphabet had only one of these letters, probably X , and that the other letter was created from it in the course of some later modification of the original alphabet.

There is one other pair of Glagolitic letters that stand next to each other in various abecedaria and that have almost identical forms and names; unfortunately, their original numerical values are not attested anywhere. These are the letters J (*jerb*) and A (*jerb*), which in early Glagolitic manuscripts usually stand for the two “reduced” vowels, $[\text{ɨ}]$ and $[\text{ɛ}]$. As with X and P , so with J and A : the original Glagolitic alphabet almost certainly had only one of these letters, while the other letter was created from it in the course of some later modification. We shall arbitrarily take J (*jerb*) as the original form and name of that one letter, which may stand for either $[\text{ɨ}]$ or $[\text{ɛ}]$.

In making this claim, I am not saying that Constantine did not distinguish the vowels $[\text{ɨ}]$ and $[\text{ɛ}]$ from one another in his own Slavic speech. I am saying only that he did not make that distinction in his original Glagolitic alphabet, *whether or not* he made it in his own speech. He certainly failed to provide different letters in that alphabet for other pairs of similar yet distinct phonemes, for example, $[\text{l}]$ and $[\text{ɫ}]$, $[\text{n}]$ and $[\text{ɲ}]$, or $[\text{r}]$ and $[\text{ʀ}]$. It should not be surprising if he failed to provide two different letters for the pair $[\text{ɨ}]$ and $[\text{ɛ}]$ as well.

We should also note that in some early Glagolitic manuscripts it can often be difficult or impossible to be sure whether the scribe meant to write J or A in any individual instance. In his edition of the *Codex Zographensis*, even so experienced an editor as Vatroslav Jagić confessed on many pages that he could not tell for certain—*haud scio*—whether the scribe had meant to write J or A in one or another instance. This

suggests that the distinction between the two letters is a secondary one, which some scribes might ignore on occasion.

4.2. Constantine of Preslav's acrostic

Constantine of Preslav's acrostic poem contains forty verses in all. However, the last four verses constitute a doxology. They do not continue the acrostic that structures the first thirty-six verses of the poem.

The first thirty-six verses of the poem exhibit a complete alphabet acrostic, which matches the original Glagolitic alphabet as far as the latter can be reconstructed from the attested numerical values of the Glagolitic letters. Though the poem has come down to us only in Cyrillic copies, its author certainly composed it with the Glagolitic alphabet in mind.

For all but a few of the thirty-six verses it is perfectly clear to which Glagolitic letter each verse corresponds. This is because the first word of that verse, if it were written in Glagolitic, would begin with that letter. Only four verses correspond to Glagolitic letters that seem not to have occurred at the beginning of any Slavic word (or at least any word known to Constantine of Preslav), namely, verse 12 to 𐌶 = [ǰ], verse 30 to 𐌷 = [č] (if one does not assign that letter to verse 26 instead), verse 31 to 𐌸 = [ъ] or [ѡ], and verse 36 to 𐌹 = [н].²² Within the first twenty-nine verses, the order of the Glagolitic letters corresponds perfectly to the order of letters that can be reconstructed from their numerical values alone, except for the letter (whatever it was) that had the numerical value 800. (Table 1, column 3, summarizes this evidence.)

A few verses of the poem require further commentary here.

Verse 12 must be emended somehow. In the manuscripts, it occurs with two variant readings. Neither reading begins with a word that could easily correspond to the expected Glagolitic letter 𐌶 = [ǰ]. Nor does either of the two variant readings observe the expected meter of the poem, which requires twelve syllables in each verse and a caesura (that is, a mandatory word-break) just after the fifth syllable.²³

²² I am convinced by the arguments of Durnovo (1929, 1931) and Trubeckoj (1954) that the reflexes of **dj* and **tj* (together with **kt* and **gt*) were two distinct sounds in the Slavic speech of Constantine and Methodius, conventionally [ǰ] and [č], and also that these sounds were the original phonetic values of the Glagolitic letters 𐌶 and 𐌷 , respectively. In transcribing these reflexes as [ǰ] and [č], I do not mean to insist on any specific pronunciation, only on their phonemic difference from the sounds [z ʒ ʒ ʒ] and [s c š č], all of which occurred in Slavic as reflexes of Common Slavic sounds *other than* **dj* and **tj*.

²³ That is, if S is a syllable and // marks the caesura, then the form of each verse should be as follows: S S S S S // S S S S S S S (that is, 5+7 syllables). More precisely, a caesura is a break between two accent groups, not between any two words.

The variant forms of verse 12 read as follows (in normalized Cyrillic orthography):²⁴

ЛѢТИТЪ БО НЫНѢ // И СЛОВѢНСКО ПЛЕМА

and

ЛѢТЬ ТИ БО НЫНѢ // И СЛОВѢНСКО ПЛЕМА

Each of these variant readings has one syllable too many in the first half of the verse, that is, six syllables instead of the expected five.

The easiest reconstruction of the *archetype* of verse 12 corrects the metrics, but it also yields a nonsense “word” ЛѢТИ:

ЛѢТИ БО НЫНѢ // И СЛОВѢНСКО ПЛЕМА

Both variant readings could easily have arisen from an attempt to make sense of the nonsense “word” ЛѢТИ.

Now the *archetype* of all the manuscripts is not the same thing as the author’s *original* text. It is simply the nearest common ancestor of all the extant texts. Unlike an original, an archetype does not necessarily have to make sense. Any scribe can garble what he copies. This, I conjecture, is what happened in verse 12. The Cyrillic letters Д and Л, as well as the equivalent Glagolitic letters Ѧ and Ѧ, look enough like one another that a careless scribe might misread the first of these letters as the second, or a wayward spot of ink might have changed the first into something very like the second. So I emend ЛѢТИ in verse 12 to ДѢТИ.

This yields the following text (with the addition of verses 13 and 14 to complete the sense):

ДѢТИ БО НЫНѢ, // И СЛОВѢНСКО ПЛЕМА
КЪ КРЪЩЕНИЮ // ОБРАТИША СЯ ВСИ,
ЛЮДИЕ ТВОИ // НАРЕЦИ СЯ ХОТАЩЕ.

‘For the Slavonic tribe too, children now,
Have all turned to baptism,
Wanting to be called Thy people.’

It is of course a commonplace in Christian rhetoric to speak of baptism as a rebirth and of the newly baptized as children.

²⁴ Here and in what follows I rely on Kuev 1974, who publishes thirty-eight manuscript texts of the poem.

Verses 22–25 begin with words that are not Slavic at all but learned borrowings from Greek: the noun $\Upsilon\pi\omicron\sigma\tau\alpha\varsigma$ < $\acute{\upsilon}\pi\omicron\sigma\tau\alpha\sigma\iota\varsigma$ ‘hypostasis’, the adjective $\Phi\alpha\rho\alpha\omicron\upsilon$ < $\Phi\alpha\rho\alpha\acute{\omicron}$ ‘Pharaoh’, the adjective $\chi\epsilon\rho\upsilon\beta\iota\mu$ < $\chi\epsilon\rho\upsilon\beta\iota\mu$ ‘cherubim’, and the vocative interjection Ω < $\acute{\omega}$. Here, too, it is more or less obvious to which Glagolitic letter each verse must correspond: $\upsilon = \text{Ѯ}$, $\phi =$ either Ѱ or ѱ , $\chi = \text{Ѳ}$ (not ѳ), and $\omega = \text{Ѳ}$.²⁵ The only real problem arises from the fact that there are two original Glagolitic letters that might correspond to Greek ϕ or Cyrillic ϕ : they are Ѱ and ѱ .²⁶ Neither of these two letters has a clearly attested numerical value anywhere in the early Glagolitic manuscripts.

Verse 26, on the surface of things, requires no emendation. The archetype of all the extant manuscripts clearly read:

ПЕЧАЛЬ МОИѢ // НА РАДОСТЬ ПРѢЛОЖИ
 ‘Turn my sorrow into joy’

However, as we shall argue below, this verse must correspond to Greek $\theta = [\text{t}^h]$. Of course, there are many Greek words that begin with the letter θ , but it is surely significant that one of them is the Greek word normally translated by ПЕЧАЛЬ , that is, $\theta\lambda\acute{\iota}\psi\iota\varsigma$ ‘sorrow’.

As we noted above, verses 22–25 begin with words that have been borrowed from Greek to exemplify their corresponding Glagolitic letters (υ , ϕ , χ , and ω). If verse 26 does correspond to Greek θ , then it, too, ought to begin with a word that has been borrowed from the Greek to exemplify the Glagolitic letter to which it corresponds (which must also correspond to Cyrillic Θ).

Accordingly, I emend ПЕЧАЛЬ to ѲЛИПЬСѢ < $\theta\lambda\acute{\iota}\psi\iota\varsigma$, which does not change the meaning of the verse.²⁷

²⁵ The choice of Ѳ , not ѳ , as the equivalent of Greek χ in this verse is determined by the attested numerical value (600) of the former letter. See section 4.1 above.

²⁶ By ѱ I refer to a Glagolitic letter that resembles a Greek Φ or a Cyrillic ϕ , but the vertical stroke has a small loop on its left side at the top, and its bottom rests on the left end of a wavy line that extends a little further to the right than any other part of the letter. (See Vajs 1932: plate I.) This letter occurs just once in all the early Glagolitic manuscripts, namely, in the *Kiev Folia* (at f. 1v16) in the word *prĕfaciĕ* (Latin *praefatio*). Elsewhere in the *Kiev Folia* the same word *prĕfaciĕ* is spelled with the Glagolitic letter Ѱ six times, as is the name *Feliciĕ* twice. Glagolitic ѱ is also found in some of the abecedaria belonging to Class III, for which see section 4.4 below. It is most definitely a different character from the ϕ commonly used in several early Glagolitic manuscripts.

²⁷ I am indebted for this emendation to the late P. Joseph Wallfield (*alias* Warren Johansson, 1934–94), with whom I often discussed the problems of this poem in the years 1964–67, while we were both graduate students at Columbia University. So far as I can tell, he never published it anywhere; but it is far too good an emendation to be forgotten. (The stem of this otherwise unattested 3rd-declension substantive is $\Theta\lambda\iota\psi\epsilon\text{-}$.)

ДЛИПЬСЬ МОИЖ // НА РАДОСТЬ ПРЪЛОЖИ.

Moreover, the Glagolitic letter to which this verse corresponds, whatever that letter may be, must have had the numerical value 800 in the original Glagolitic alphabet. It must, therefore, also have had a *form* (χαράκτήρ) that could have suggested the form of the Cyrillic letter Д to the scribe of the *Paroemiarium Grigoroviči*, as well as the form of the later Glagolitic letter Δ to the scribe of the *Breviarium Vrbnicense Secundum*.²⁸ This, in turn, also requires that the Glagolitic letter in question must have already become rare or obsolete by the twelfth century, and it must have been completely unknown to Glagolitic scribes at the end of the fourteenth century. If it is a letter that can be found anywhere in the early Glagolitic manuscripts, then this letter can only be ꙗ, which meets all these conditions.

If verse 26 corresponds to the Glagolitic letter ꙗ (and to Greek θ), then the Glagolitic letter to which verse 23 corresponds can only be the very rare letter ꙗ. This letter is attested only once in any extant Glagolitic manuscript (see fn. 26 above). It is also found in some of the abecedaria that belong to Class III (see section 4.4 below).

Verses 30 and 31 pose difficulties of another order, which arise from the simple fact that there are two verses, but three Glagolitic letters that cannot easily be assigned to any verse other than either of these: these letters are Ѡ and the two reduced vowels, ѡ and ѧ.

Earlier scholars took it for granted that the original Glagolitic alphabet must have contained a distinct letter for each “reduced” vowel, and that each of these distinct letters had its own position in that alphabet (and corresponded to its own verse in Constantine of Preslav’s acrostic). If this were so, then those two letters could only correspond to verses 30 and 31. In consequence of that result, the letter Ѡ would have either to be excluded from the original Glagolitic alphabet or to be assigned to position 26, where in fact it does occur in the later Glagolitic abecedaria (Class II) and the later Glagolitic system of numerical values. However, we have just argued that the letter ꙗ should be assigned to position 26. If we were to assign Ѡ to that position instead, then it is ꙗ that we would have to exclude from the original Glagolitic alphabet. Neither option is acceptable.

However, I have argued above (in section 4.1) that the original Glagolitic alphabet contained just one letter for both reduced vowels, and that the distinction between ѡ and ѧ is a later modification of the original alphabet, just like the distinction between ꙗ and ꙗ. If that is so, then only one verse corresponds to the single letter for the

²⁸ For the form of the letter Δ in the *Breviarium Vrbnicense Secundum*, see Jagić 1911: plate XVI #41, or Vajs 1932: plate XXXVII. Its form is more rectilinear than the form of the same letter in early Glagolitic manuscripts. The uppermost of its three cells has usually been shifted leftward, lying almost directly above the lower cell on the left, so that the lower cell on the right side seems to stick out on the right of the letter. The result is somewhat like the Cyrillic letter д, only backwards, with a horizontal stroke to close the open bottom of the П and another horizontal stroke midway up the П.

reduced vowels, namely, verse 31, which begins with **ИМЕНИ**. In that event, verse 30 (which begins with **ШѢТВѢЮЖ**) can easily correspond to the letter **Ѣ**, and verse 26 (which begins with **ДЛИПЬСЬ**, emended from **ПЕРЛАЛЬ**) to the letter **Ѣ**.

Verse 33, which begins with the sound [x] (in the word **ХВАЛЖ**), corresponds to one or the other of the two Glagolitic letters, **Ѣ** and **Ѣ**, that can stand for that sound in early Glagolitic manuscripts.²⁹ As we saw above, it is **Ѣ**, not **Ѣ**, that has the numerical value 600. Thus the letter **Ѣ** corresponds to verse 24, and it can only be the letter **Ѣ** that stands for the initial [x] in verse 33.

Verse 36 begins with the nasal vowel [ɛ̃] (in the word **ѦЗЫКЪ**). In the original Glagolitic alphabet this nasal vowel would have been written as the vowel [ɛ] = **Э** followed by the nasal consonant [ɲ] = **Ї**, thus: **Э Ї**.³⁰ Since [ɲ] occurs only after vowels, it cannot occur at the beginning of any word. It is clear that this verse corresponds to the letter **Ї** = [ɲ].

4.3. A note on Monk Xrabr's treatise

The short treatise “On the letters” (*O pismenexъ*) was composed in the first third of the tenth century by a monk named Xrabr. In his treatise Xrabr compares the writing system (*knigъ*) that Constantine invented with the Greek writing system, and he finds them to be equivalent in the number of their several components. He notes, correctly, that Greek is written with twenty-four letters (*pismena*), but also with eleven

²⁹ In the *Psalterium Sinaiticum* the letter **Ѣ** occurs at ff.78r19, 149v2, and 149v7, always in the word **хѢмъ** = Greek **βουνός**. The letter **Ї** is miswritten for **Ѣ** in the same word at f. 88v11. (The same word is written with the letter **Ѣ** just once, at f. 104r20–21.) In the recently discovered additional leaves from the end of that manuscript the word **хѢмъ** occurs at least three more times (at ff. 10v11, 18v2, and 28r26), where it is always written with the letter **Ѣ**. The sole example of the letter **Ѣ** in *Evangelium Assemanianum* also occurs in the word **хѢмъ** (at f. 150b27), which is the only instance of that word in the entire manuscript. All these examples suggest that the name of the rare letter **Ѣ** was **хѢмъ**. Otherwise the letter **Ѣ** is found only in a few abecedaria.

³⁰ In the original Glagolitic alphabet there are no single letters for nasal vowels, but each of them is written as if it were an oral vowel followed by a consonant [ɲ] that occurs only in this position and has this function only. Thus [ɛ̃] is written as **Э Ї**, [ɔ̃] is written as **Э Ї** and [jɔ̃] is written as **Ѣ Ї** (using a vowel letter for [jo] that occurs only before [ɲ]). Later scribes often run the two letters together to produce complex signs for the nasal vowels: **ЭЇ**, **ѢЇ** and **ѢЇ**. It seems likely to me that Constantine heard the nasal vowels of his Slavic speech in an idiosyncratic fashion, as if they were closed syllables ending in some strange nasal consonant [ɲ] that was neither [m] nor [n] nor [ɲ]. His native Greek had many kinds of closed syllables, but no nasal vowels. Contrariwise, Slavic had no closed syllables, so a native speaker of Slavic might mishear a Greek closed syllable ending in a nasal consonant as if it ended in a nasal vowel. This is probably what underlies the curious spelling of the Greek word **ἄγγελος** [ángelos] in the *Psalterium Sinaiticum* as **ѢЇѢѢѢ** **анѢелъ** with the letter [ɲ] after the initial [a], apparently to write a Greek sound heard by a Slavic scribe as a nasal vowel [ã], not otherwise found in his speech.

“diphthongs” (*dvoglasnaja*) or digraphs and that it also has three numerals (*čismena*), yielding a total of thirty-eight components. He also says that this is the same as the number of components in Constantine’s writing system. Thus the total of thirty-eight must include not only all the letters in Constantine’s Glagolitic alphabet but also any digraphs that Constantine may have invented for writing Slavic. (In the Glagolitic alphabet there are no numerals that are not also letters.)

Indeed, the oldest Glagolitic manuscripts regularly employ two such digraphs to write Slavonic, which stand for the simple sounds [u] (originally written Ѣ, later simplified to Ꙑ) and [y] (written ꙑ). So the calculation runs as follows:

	Greek	Slavic
Letters	24	36
Digraphs	11	2
Numerals	3	0
Total	38	38

The number of letters thus agrees with the number of verses in Constantine of Preslav’s acrostic.

Xrabr also notes that certain sounds cannot be written in a distinct fashion using Greek letters, and he gives ten examples of Slavonic words that begin with the letters for ten such sounds: Ѣ, Ѧ, Ꙑ, Ѣ, ꙑ, Ѣ, ꙑ, ꙑ, ꙑ, and ꙑ. Since he confines himself to examples where the sound in question occurs at the beginning of a word, his list omits words for [ʒ] = ꙑ, [č] = ꙑ, and [t] = ꙑ. He does include a word that represents [n] = ꙑ, though [n] is not strictly speaking quite the first sound in the word (ѢЗЫКЪ) that he cites. His ten examples correspond exactly, in the same order, to ten verses in Constantine of Preslav’s acrostic.³¹ (See Table 4, column 4.)

Further on in his treatise Xrabr may originally have included a full Glagolitic alphabet. If so, all the extant copies—which are all in Cyrillic—cut off this alphabet after the first few letters.³²

³¹ This implies that for Xrabr, the letter Ѣ was pronounced not as [k^h], but as [x], just like the letter ꙑ. This difference from Constantine of Thessalonica’s pronunciation of the letter Ѣ as [k^h] cannot represent a phonetic change across a time span of no more than a single generation, but only a phonetic difference between more and less formal (or learned) pronunciations of Greek existing at the same time.

³² Almost three-fourths of the extant manuscripts of Xrabr’s treatise add here a list of twenty-four letters that correspond to the Greek alphabet and fourteen more letters that represent Slavic sounds. This addition originated as a gloss by a later scribe (who wrote it in Glagolitic), but that scribe had a very poor grasp of Xrabr’s argument about the thirty-eight components—not letters!—of the Greek and the Glagolitic alphabets. He also had no real knowledge of the details of the original Glagolitic alphabet. As if this glossator did not sow enough confusion, the scribes who transcribed his gloss into Cyrillic, and moved it from the margin into the body of Xrabr’s text, misunderstood and garbled what they copied and then emended it further in mis-

4.4. Glagolitic and Cyrillic abecedaria

Abecedaria are lists of the letters of an alphabet in their proper order. Elsewhere I have distinguished five classes of Glagolitic and Cyrillic abecedaria, as follows.³³

Class I contains abecedaria that seem perfectly to exhibit the original inventory and order of all the letters of the Glagolitic alphabet, whether in their original Glagolitic forms or in their equivalent Cyrillic forms. No more than a handful of the earliest abecedaria may belong to this class. They include a number of early Glagolitic and Cyrillic abecedarian graffiti, none of which is complete. To this class also belong the acrostic in Constantine of Preslav's poem (section 4.2) and the two partial alphabets in the oldest form of Xrabr's treatise (section 4.3).

Several repetitions of the Glagolitic alphabet occur in the *Apostolus Christinopolitanus*, written in Galicia in the twelfth century. In this Cyrillic manuscript successive letters of the Glagolitic alphabet serve to link the oldest layer of commentary in the margin of the pages to the corresponding biblical texts (very much like our modern use of numbers with footnotes). For reasons of cultural history, I suspect that these alphabets may prove to be the best and most complete surviving examples of Class I, but only a very few tantalizing scraps of information about them have been published so far. Among these scraps is a sequence of four consecutive Glagolitic letters: Ѡ Ѣ Ѥ Ѧ.³⁴

The other four classes of abecedaria all reflect various later modifications of the original Glagolitic alphabet. Each of them offers valuable evidence for that original but does not preserve the original inventory and order of the letters perfectly. They are as follows:

Class II contains later Glagolitic abecedaria. As a rule, they have thirty-three letters instead of thirty-six.

In this class, letters 26 (Ѣ) and 33 (Ѧ) have been excised from the alphabet. Letters 34 (Ѥ) and 35 (Ѧ) have been combined into one letter that has the form of the latter (Ѧ) but the name of the former (*jus*). Letter 30 (Ѧ) has been moved to the place vacated by the excised letter 26 (Ѣ), and it has also assumed the numerical value (800) proper to its new place in the alphabet.

None of the abecedaria in this class seems to be earlier than the fourteenth century.

Class III contains only a handful of abecedaria, ranging from the twelfth century to the middle of the fifteenth. Some of them are Glagolitic; the others are atypical

guided attempts to repair the damaged text. (See Kuev 1967: 47–48 for a list of the manuscripts that preserve the gloss in its various forms.) Like the “Abecenarium Bulgaricum” and the Munich abecedaria, it misleads more than it leads true.

³³ Mathiesen 1981–83.

³⁴ See Kałużniacki 1896: XV and the plate, Maslov 1910 (with the run of four Glagolitic letters), and Mathiesen 1999.

Cyrillic that has been heavily influenced by Glagolitic. In contrast to the later Glagolitic abecedaria of Class II, the letter Ѡ still occupies position 30 in the abecedaria of this class.

All the abecedaria in this class, with one exception, seem to have been regarded as exotic curiosities, which were copied from lost originals by scribes who were accustomed to writing only in the Latin alphabet.³⁵ This greatly reduces their value as evidence for the original Glagolitic alphabet, even though two of them are among the very oldest Slavic abecedaria that have come down to us. They include the following:

The Glagolitic “Abecenarium Bulgaricum.” It has this title in the original. (The adjective “Bulgaricum” in its title may refer to the Cathar, or Bogomil, Church rather than to Bulgaria proper.) Unfortunately, the original has been missing for more than a century now.³⁶ To judge by the only known independent facsimile (Kopitar’s) taken from that original, the Latin hand of its scribe is most likely to be dated to the twelfth century.³⁷ The scribe was working from a written source, for at least once and possibly more than once his eye skipped from one letter to another similar letter further on in the alphabet, so that he left out some parts of his original.

The two Munich Abecedaria, Cyrillic and Glagolitic. They were copied onto the blank lower half of the last page of a tenth-century Latin manuscript in the Bavarian State Library at Munich (CLM 14,485).³⁸ It is impossible to date them with any accu-

³⁵ The exception is Radosav (see below), who appears to have employed his form of the Glagolitic alphabet for cryptographic purposes. The two abecedaria that he copied into his Cyrillic manuscript in the middle of the fifteenth century are perhaps the most reliable of all the ones in Class III.

³⁶ The original, according to Kopitar 1836: iv, x, xxviii–xxix, plate I.5, was a loose strip of parchment inserted into a Latin manuscript held by the National Library at Paris (Ms. No. 2340). This manuscript has been missing since at least 1910. Not long after that date, a manuscript of seemingly identical contents but without any known early provenance was acquired by the Strasbourg University Library, where it is now Ms. 326 (Latin Ms. No. 275). No other manuscripts with just the same contents seem to exist (see Laistner and King 1943), so the question naturally arises whether they may both actually be one and the same manuscript. In any event, the loose piece of parchment with the “Abecenarium Bulgaricum” is not now in the Strasbourg manuscript. It may have been removed from the manuscript and added to some folder of paleographically interesting loose leaves while it was still at Paris. Because such paleographic specimen leaves are often not catalogued individually but only inventoried, a careful search of all of the specimen leaves held by the National Library at Paris might yet recover the missing “Abecenarium Bulgaricum.” (The same kind of search might also be carried out at Strasbourg if the lost leaf cannot be found at Paris.)

³⁷ All later facsimiles of this abecedarium simply reproduce Kopitar’s facsimile (1836: plate I.5), and all of them that I have seen have also cut off the right side of that facsimile, thereby hiding the short Latin text that the scribe of the abecedarium wrote there, which provides good paleographic evidence for dating the lost original. See now Marti 1991: 146–47, whose facsimile also cuts off the right side of Kopitar’s facsimile.

³⁸ Noted by Jagić (1911: 137), but first published and studied by Trubeckoj (1930) and Durnovo (1930). See now Marti 1991: 147–48 and plate.

racy on paleographic grounds, though they are clearly a later addition to the manuscript. They seem to have been poorly understood by the scribe who copied them, but even so they show several archaic features that probably go back to the original Glagolitic alphabet. Despite their age, they can be used as evidence for that alphabet only with the greatest caution.

The atypical Cyrillic alphabet written by Paul of Krbava (ca. 1400 AD) is noteworthy in that it shows the Glagolitic letter Φ in place 26. In place 23 it offers two forms of Cyrillic ϕ , and one of them is odd in ways that remind me slightly of the Glagolitic Φ that occurs just once in the *Kiev Folia*.³⁹

The two eccentric Glagolitic abecedaria of the “Christian” (i.e., adherent of the Cathar or Bogomil Church) Radosav, written twice in a manuscript from the middle of the fifteenth century. Like Paul of Krbava’s abecedarium, Radosav’s abecedaria have an odd form of Glagolitic ϕ (reminiscent of Φ) in position 23, while in position 26 there is a much less eccentric form of ϕ , reminiscent of the usual ϕ in later Glagolitic abecedaria.⁴⁰

Class IV contains the later South Slavic Cyrillic abecedaria, which usually have 36 (or sometimes 37) letters, but they are not the original 36.

In this class, letters 12 (\mathfrak{M}) and 33 (\mathfrak{H}) have been cut from the alphabet. Letters 34 ($\Phi = \mathfrak{K}$) and 35 ($\mathfrak{P} = \mathfrak{I}$) have been merged into one letter, which has the form \mathfrak{I} but the name *jus*, just as in the abecedaria of Class II. Positions 23 ($\Phi = \phi$), 24 ($\mathfrak{I} = \mathfrak{X}$), 25 ($\mathfrak{Q} = \mathfrak{W}$), and 32 ($\mathfrak{A} = \mathfrak{B}$) have usually been split each into two distinct letters, as follows: \mathfrak{Q} and ϕ , \mathfrak{X} and \mathfrak{b} , \mathfrak{W} and \mathfrak{W} , and \mathfrak{B} and \mathfrak{h} . Note that the letter originally in position 30 ($\mathfrak{A} = \mathfrak{b}$) has become the second letter in position 24, due perhaps to the similarity that had developed between their names (*hijer* and *jer*). Letter 26 ($\Phi = \mathfrak{Q}$) has usually been replaced by Cyrillic Ψ (*psi*). Cyrillic \mathfrak{Z} (*ksi*) is often added at the end of the alphabet.

None of the abecedaria in this class seems to be earlier than the fifteenth century.

Class V contains the East Slavic Cyrillic abecedaria.

Letters 12 (\mathfrak{M}), 26 (Φ), and 33 (\mathfrak{H}) have been cut from the alphabet. Letter 27 (\mathfrak{Q}) is usually \mathfrak{W} instead of \mathfrak{W} . Letter 30 has usually been split into three letters ($\mathfrak{A} = \mathfrak{Z}$, \mathfrak{b} , \mathfrak{b}). Often a half-dozen or more additional letters have been added at the end, such as \mathfrak{W} , \mathfrak{h} , \mathfrak{Z} , Ψ , \mathfrak{Q} , and \mathfrak{V} .

Some of the abecedaria in this class are as old as the eleventh or twelfth century.

³⁹ First studied and published by Kos (1924–25: 372–75, 389). See now also Marti 1991: 150–52 and plates.

⁴⁰ See now Štefanić 1959 (with plates) and Vrana 1960.

Table 2. Constantine's original Glagolitic alphabet

Order (τάξις)	Form (χαρακτήρ)	Numeral (ἀριθμός)	Phonetic Value (δύναμις)	Name (ὄνομα)
1	ⲁ	1	[a]	azъ
2	Ⲃ	2	[b]	buky <i>or</i> bukъvi
3	Ⲃ̅	3	[v]	vědě
4	Ⲅ	4	[g]	glagolъ <i>or</i> glagolіę
5	Ⲅ̅	5	[d]	dobro
6	Ⲇ	6	[e]	jestъ
7	Ⲇ̅	7	[ž]	živěte
8	Ⲉ	8	[z]	zělo
9	Ⲉ̅	9	[z]	zemlа
10	Ⲑ (var: Ⲑ̅)	10	[i]	iže
11	Ⲑ̅	20	[i]	i
12	Ⲓ	30	[ǰ]~[ž]	že (< <i>Greek</i> : γαῖα ?)
13	Ⲓ̅	40	[k]	kako
14	Ⲕ	50	[l] and [l̥]	ludъje
15	Ⲕ̅	60	[m]	myslite
16	Ⲗ	70	[n] and [n̥]	našъ
17	Ⲗ̅	80	[o]	opъ
18	Ⲙ	90	[p]	rokojъ
19	Ⲙ̅	100	[r] and [r̥]	гъci
20	Ⲛ	200	[s]	slovo
21	Ⲛ̅	300	[t]	tvъdo <i>or</i> tordo
22	Ⲝ	400	[ū] (<i>Greek only</i>)	ūkъ (< <i>Greek</i> : οἰκος ?)
23	Ⲝ̅	500	[p ^h] (<i>Greek only</i>)	p ^h ertъ (< <i>Greek</i> : φερτός ?)
24	Ⲟ	600	[k ^h] (<i>Greek only</i>)	k ^h ěrъ (< <i>Greek</i> : χαῖρων ?)
25	Ⲟ̅	700	[o]	otъ <i>or</i> o (< <i>Greek</i> : ὦ ?)
26	Ⲡ	800	[t ^h] (<i>Greek only</i>)	t ^h e (< <i>Greek</i> : θεός ?)
27	Ⲡ̅	900	[c]	ci
28	Ⲣ	1000	[č]	čъvъ <i>or</i> čъvi
29	Ⲣ̅	2000	[š]	ša
30	Ⲥ	3000 (?)	[ć]	ća
31	ⲥ (var: ⲥ̅)	4000 (?)	[ъ] and [ь]	jeгъ (var: jeгъ)
32	Ⲧ	5000 (?)	[ě]	jať
33	Ⲧ̅	6000 (?)	[x]	xlъmъ (?)
34	Ⲩ	7000 (?)	[jo]	jъsъ
35	Ⲩ̅	8000 (?)	[ju]	ju
36	Ⲭ	9000 (?)	[N]	ję

Digraphs: ⲞⲢ = [u] (*name*: opъ ūkъ)

ⲞⲢ̅ = [y] (*name*: jeгъ i)

5. The original Glagolitic alphabet reconstructed

On the basis of all this evidence we can reconstruct with great confidence an original Glagolitic alphabet containing 36 letters, which is exhibited in Table 2.

In this table, the first column numbers the *letters* (γράμματα) in their proper *order* (τάξις), from 1 to 36. The second shows the *form* (χαρακτήρ) of each letter. The third column gives its *numerical value* (ἀριθμός), with the unattested values indicated by question marks. The fourth column gives the *phonetic value* (δύναμις), whether Slavic or Greek, that Constantine had ascribed to each letter. The fifth column gives the *name* (ὄνομα) of each letter, as well as it can be determined on the evidence of all the abecedaria.

In addition to the 36 letters of the alphabet, Table 2 includes two digraphs for Constantine's original Glagolitic writing system, with their phonetic values and their names.⁴¹

These are all the components of the writing system (*knigý*) that Constantine devised for his Slavic speech.

6. Glagolitic and Armenian

We mentioned in section 3 that Constantine's early mentor, Patriarch Photius, had enough knowledge of Armenian to make good use of histories written by Armenians in their native language. We also surmised that Constantine himself might have acquired some knowledge of Armenian, although no document tells us that in so many words. However, the original Glagolitic alphabet, as we have reconstructed it, offers some support for this surmise.

That reconstructed original Glagolitic alphabet seems to fall naturally into four parts, as follows:

⁴¹ Although we have not said much about the digraphs so far, it should be noted that one of them, $\mathfrak{U}\mathfrak{S} = \mathfrak{U} + \mathfrak{S} = [\text{u}]$, corresponds exactly to the equivalent Greek digraph used for the same sound, $\text{ov} = \text{o} + \text{v} = [\text{u}]$, inasmuch as $\mathfrak{U} = \text{o}$ and $\mathfrak{S} = \text{v}$. In Greek, one had to distinguish between $[\text{u}]$, written with the digraph ov , and two successive syllables in words such as the proper name Μωϋσῆς , pronounced in three syllables, $[\text{mo}^{\text{u}}\text{s}^{\text{is}}]$. This difference was shown, in part, by using o to write the digraph ov , but ω to write the two-syllable sequence ov . The use of the corresponding Glagolitic digraph to represent $[\text{u}]$ meant that one had to distinguish monosyllabic $[\text{u}]$ from the two-syllable sequence $[\text{o}\text{u}]$ in words (usually proper names) borrowed from the Greek. This was done in Glagolitic by using the digraph $\mathfrak{U}\mathfrak{S} = \text{ov}$ for $[\text{u}]$, but the two letters $\mathfrak{Q}\mathfrak{S} = \text{ov}$ in borrowings from the Greek like Μωϋσῆς . Here is the reason why Constantine needed to include two letters for $[\text{o}]$, namely, \mathfrak{U} and \mathfrak{Q} , in the original Glagolitic alphabet. An argument can be made with exactly the same structure to explain why Constantine also needed two letters for the sound $[\text{i}]$ in the original Glagolitic alphabet. In Slavic words he needed to distinguish between $[\text{y}] = \mathfrak{I}\mathfrak{S}$ (the digraph *jerŭ i*) and the two-syllable sequence $[\text{ɣji}] = \mathfrak{I}\mathfrak{Z}$ (*jerŭ* plus *ize*).

Part	Positions	and Letters (in Alphabetic Order)	Count
1	1–21	ᐱ ᐢ ᐣ ᐤ ᐥ ᐧ ᐨ ᐪ ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ	21
2	22–26	ᐺ ᐻ ᐼ ᐾ ᐿ	5
3	27–33	ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ	7
4	34–36	ᑈ ᑍ ᑎ	3

In Part 2 he went through the Greek alphabet again to ask whether he would need to retain any of the excluded letters in order accurately to represent the Greek pronunciation of all the Greek words that he would need to *import* into Slavic as he translated biblical, liturgical, and patristic texts from Greek into that language. Such words would include a large number of proper nouns (for example, names of people and places), as well as many technical terms used in theology and liturgy. For whatever reasons, Constantine clearly thought that he had to spell each of these Greek words in such a way as to preserve all the distinctive features of its Greek pronunciation.⁴³ To do this, he needed to devise more Glagolitic letters, this time to represent all the Greek distinctive sounds that do not occur anywhere in Slavic. After consideration, he devised Glagolitic letters to correspond to five of the letters that he had excluded while working on Part 1 of the Glagolitic alphabet. In the Greek alphabet, four of these letters (υ, φ, χ, and ω) immediately followed the letter (= τ) that stood at the end

⁴³ Constantine realized that he would be forced to defend all his work among the Slavs theologically as well as politically. *Vita Constantini* XIV.11 represents him as insisting on his need for a Slavic alphabet if he were to accomplish the work that the Emperor was sending him to do in King Rastislav's land: "Who can write a text on water and earn for himself the name of a heretic?" He would need to consider very carefully every word that he wrote in Slavic if he hoped to defend himself against charges of heresy and to counter every possible way in which any word of his might deliberately be misconstrued. At that point it became a *very* minor concern whether any monolingual Slav could actually wrap his tongue around the correct pronunciation of every Glagolitic letter that Constantine required to represent Greek technical terms accurately. The theological accuracy that he needed could not be compromised just to accommodate the facts of Slavic phonology.

of Part 1.⁴⁴ He added the fifth of these letters (θ) at the end of Part 2, rather than restoring it to its original place between the letters for η and ι in Part 1. It is this last detail that shows there is a difference between parts 1 and 2.

Parts 3 and 4 contain Glagolitic letters that have nothing to do with the Greek alphabet.

The letters in Parts 1 and 2 did not suffice to write most texts in Slavic. It must have become clear to Constantine almost at once that still more Glagolitic letters would be needed. Having exhausted the Greek alphabet, he now turned to another alphabet, or to several other alphabets, for help in completing the rest of his work. With the help of those he devised several more Glagolitic letters, the first four of which stood for the Slavic sounds [c], [č], [š], and [ć]. The next three letters, which stand for [ɫ], [ě], and [x], may also have been devised on the same basis. These letters form part 3 of the Glagolitic alphabet.

Most scholars have looked no farther than to the Semitic alphabets for the basis of the Glagolitic letters in part 3 of the alphabet. These alphabets do have letters for [c] and [š] (for example, Hebrew ʕ/ח and ש), which occur in the same order. Some of them also have a consonant somewhat like [x] (Hebrew ח), as well as vowel sounds somewhat like [ɫ] and [ě] (Hebrew שׁווא and שׂגול, perhaps).

However, the Armenian alphabet provides a fuller model for part 3 of the Glagolitic alphabet, for it includes letters that stand for sounds very like the sounds of *all* the Glagolitic letters in that part. The first few of these sounds even occur in the same order in both alphabets. Compare the sequence of these four Glagolitic letters in part 3 (I have also included the last letter in part 2),

... ϥ = [t^h], Ϸ = [c], Ϩ = [č], ϩ = [š], Ϫ = [ć] ...

with the sequence of five Armenian letters that stand for similar sounds,

... Թ = [t^h] ... Ծ = [c] ... Շ = [č] ... Տ = [š] ... Զ = [č^h] ...

To be sure, each of these five Armenian letters is separated from the next by several intervening letters, but the parallel between the two alphabetic orders is still suggestive.

The Armenian alphabet also distinguishes between the letters Խ = [x] and Ք = [k^h], as does the Glagolitic alphabet. It also has a distinct letter for a “reduced” vowel Լ = [ə] and another distinct letter for another vowel Է = [ē] that is different from Ե = [e]. These similarities strengthen the parallel between the two alphabets more than a little.

⁴⁴ For the reason why Constantine needed two Glagolitic letters corresponding to Greek [o] = o and ω, as well as two others corresponding to Greek [i] = η and ι, see fn. 41 above.

Part 4 contains the last three letters in the Glagolitic alphabet. They stand for sounds that seem utterly to have perplexed Constantine. Therefore he dealt with them only after he had finished working on the rest of his alphabet. They stand for the nasal vowels [ɛ̃] and [ɔ̃], and also the glide [j], but not in a simple one-to-one fashion. Constantine's native Greek had no nasal vowels, although it had many syllables ending in a nasal consonant immediately after a vowel. As noted above, Constantine misheard and misanalysed the Slavic nasal vowels as if they were sequences of a vowel followed by an odd nasal consonant [ɲ], not the same as [m] and [n] and [ŋ].⁴⁵

Nor did Constantine's native Greek give him much help in analyzing the phoneme [j], which was distinctive only before the rounded vowels [u] and [ɔ]. He misheard and misanalysed the sequences [ju] and [jɔ], too. He appears to have heard each of them (apart from the nasality of [jɔ]) as a single, odd oral vowel sound, and he devised a single vowel letter to stand for each of them, namely, [ju] = ϣ and (without nasality) [jo] = ϣ.⁴⁶ Together with [ɲ] = ϣ, these letters brought his alphabet to completion. It had thirty-six letters in all.

If Constantine did have some knowledge of Armenian, as I suppose he did, then he might have been struck by a coincidence. The Armenian alphabet also contained exactly thirty-six letters. Since it had that many letters, its system of numerical values extended beyond that of the Greek alphabet to encompass the nine thousands as well as the nine units, tens, and hundreds. There is some evidence that the Glagolitic system of numerical values also extended out to the thousands. If it did, then the influence of the Armenian alphabet is likely here also.

This coincidence might have inspired Constantine to learn whatever he could about the origin of the Armenian alphabet and the life of the man who had created it, Mesrop-Maštoc' (Armenian sources use either name or both). Armenian historians have a good deal to say about Mesrop and about his work and why he did it, long before Constantine's time.⁴⁷ We know that Constantine's early mentor, Photius, had

⁴⁵ See fn. 30 above.

⁴⁶ Trubeckoj, who believed that Constantine had an excellent instinct for phonological analysis, supposed (1954) that these two vowel letters had to stand for single sounds, and he thought that they were simple fronted vowels [ü] and [ö] instead of misanalysed sequences of two sounds each, [ju] and [jɔ]. Presumably this [ü] = ϣ differed somehow in its pronunciation from the other [ü] = ϣ. For my part, I suppose that Constantine was not a skilled phonologist centuries in advance of his age, but that he built his alphabet on the simple foundations laid by other, older alphabets and that the considerations on which his mind dwelt as he did so were theological rather than linguistic.

⁴⁷ The best of the Armenian sources is a *Vita* of Mesrop (*Vark' Maštoc'i*) by his disciple Koriun. Koriun tells us that Mesrop created three alphabets in all, first one for the Armenians, then another for the Georgians, and finally a third for the Caucasian people known as *Ahuank'*, the inhabitants of the country that the Greeks called Ἀβασγία *Abasgia*, that is, the "Abkhazes" (who are not the same as the Turkic people with a very similar name). Note that all three of these nations are included in Constantine's list of peoples with their own writing (*Vita Constantini* XVI.8: *Armeni [...]* *Avazbgy*, *Iveri [...]*).

read at least one or two of these Armenian historians, including Movsēs Xorenac‘i (presumably in the original Armenian, as no early translation of his work is known to have existed). Even if Constantine’s knowledge of Armenian was rudimentary, he could have learned more from Photius about Mesrop’s work than most other Byzantine scholars ever cared to know.

A man with Constantine’s kind of mind and mystical inclinations could not have failed to be impressed by the parallels between what Mesrop had done at the beginning of the fifth century and what he himself was attempting to do so many centuries later. If he did know of the work of Mesrop—and I have no doubt that he did—he would undoubtedly have taken it as an inspiration for his own work and as a confirmation of its merit. I find it extremely plausible that Constantine did just that.

In any case, there is much more work to do before we will fully understand everything that Constantine intended to accomplish when he invented the Glagolitic alphabet.⁴⁸

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⁴⁸ After I had completed this article, my attention was called to Kempgen 2008, who has examined the recently discovered *Abecedarium glagoliticum Sinaiticum* (Class III, not older than the twelfth century) with particular attention to the letter that occupies position 26 in our reconstruction and has the numerical value 800. He has published the first clear photograph of the form of that letter and analyzed its *ductus* (the sequence of pen-strokes that the scribe used to write it). It is an incomplete, poorly written form of the letter Φ : the scribe wrote the left, top, and right strokes of the central rectangle, but omitted its bottom stroke. He then wrote the left third of the cross-stroke, together with the loop at its end, but omitted the central third of that stroke (running through the middle of the rectangle). He extended the right third of the cross-stroke from the bottom of the rectangle instead of the middle, and the loop at its end is missing. As Kempgen noted, this form of the letter stands in a close relation to the form \mathcal{J} that the same letter has in the *Paroemiarium Grigoroviči* and also to one of the two forms of the same letter in the Munich abecedaria.

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